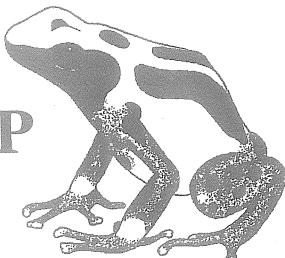


Dendrobates tinctorius
(2 White morph variants).

AMERICAN DENDROBATID GROUP



© 1995 Ted R. Kahn
Ectotherm Scientific

Newsletter No. 20

March-April 1995

The purpose of the ADG is to develop better communication between Dendrobatid breeders in North America. It is designed, by its format and bi-monthly distribution, to provide current information and new developments in the hobby. We hope that this will aid us in solving some of the problems which confront us all. This newsletter appears bimonthly at a cost \$10.00 per calander year. Back issues for 1992 are available for \$5.00; back issues for 1993 and 1994 are available for \$10.00/year.

Subscriptions, comments, etc. should be sent to Charles Powell (2932 Sunburst Dr., San Jose, CA 95111 Tel.: (408) 363-0926).

Notes from the Editor

We now have our new header, above, and I think everyone will be very pleased with the beautiful art. These illustrations were done by Ted R. Kahn a scientific illustrator specializing in herps. He has graciously contributed the above illustrations to the ADG to promote the keeping of poison frogs, but he will continue to hold the copyright for the illustrations. Ted is a scientific illustrator who specializes in herps (he breeds Dendrobatids and other herps) and his work has been published in most major Herpetological journals. Ted's art is also on permanent display at the Smithsonian Institution's United States National Museum in Washington D. C. The frogs illustrated above are both white morphs of *Dendrobates tinctorius* from Ted's personal collection. Currently, Ted has eight "white" *D. tinctorius* which are mostly unrelated and originally came from French Guyana. All these "white" morphs look different from one another and he is hoping to have surplus offspring soon. Ted's address is listed in the "ads" section, below, if anyone is interested in herp related illustrations and/or frogs. Thanks Ted.

Some notes on the natural history, captive husbandry, and reproduction of the Avocado Harlequin Toad, *Atelopus peruvensis* Gray and Cannatella

Danté Fenolio

In 1985 a new Atelopid toad was described by Gray and Cannatella (1985) which inhabits the high Andean puna and subpuna of Departamento de Cajamarca, Perú. Named *Atelopus peruvensis*, in recognition of its country of origin, the toad was placed in the *A. ignescens* species group. In placing *A. peruvensis* in the *A. ignescens* species group it became the first *Atelopus* from Perú to belong to this group. Two other species of *Atelopus* are considered very similar to *A. peruvensis*: *A. bomolochos* and *A. ignescens*, which both occur in adjacent Ecuador.

The *Atelopus ignescens* species group was defined by Peters (1973) for *Atelopus* with short limbs, heavy set bodies, and dull coloration when compared to many lowland species of *Atelopus*.

Newsletter No. 20

March-April 1995

The purpose of the ADG is to develop better communication between Dendrobatid breeders in North America. It is designed, by its format and bi-monthly distribution, to provide current information and new developments in the hobby. We hope that this will aid us in solving some of the problems which confront us all. This newsletter appears bimonthly at a cost \$10.00 per calander year. Back issues for 1992 are available for \$5.00; back issues for 1993 and 1994 are available for \$10.00/year.

Subscriptions, comments, etc. should be sent to Charles Powell (2932 Sunburst Dr., San Jose, CA 95111 Tel.: (408) 363-0926).

Notes from the Editor

We now have our new header, above, and I think everyone will be very pleased with the beautiful art. These illustrations were done by Ted R. Kahn a scientific illustrator specializing in herps. He has graciously contributed the above illustrations to the ADG to promote the keeping of poison frogs, but he will continue to hold the copyright for the illustrations. Ted is a scientific illustrator who specializes in herps (he breeds Dendrobatids and other herps) and his work has been published in most major Herpetological journals. Ted's art is also on permanent display at the Smithsonian Institution's United States National Museum in Washington D. C. The frogs illustrated above are both white morphs of *Dendrobates tinctorius* from Ted's personal collection. Currently, Ted has eight "white" *D. tinctorius* which are mostly unrelated and originally came from French Guyana. All these "white" morphs look different from one another and he is hoping to have surplus offspring soon. Ted's address is listed in the "ads" section, below, if anyone is interested in herp related illustrations and/or frogs. Thanks Ted.

Some notes on the natural history, captive husbandry, and reproduction of the Avocado Harlequin Toad, *Atelopus peruvensis* Gray and Cannatella

Danté Fenolio

In 1985 a new Atelopid toad was described by Gray and Cannatella (1985) which inhabits the high Andean puna and subpuna of Departamento de Cajamarca, Perú. Named *Atelopus peruvensis*, in recognition of its country of origin, the toad was placed in the *A. ignescens* species group. In placing *A. peruvensis* in the *A. ignescens* species group it became the first *Atelopus* from Perú to belong to this group. Two other species of *Atelopus* are considered very similar to *A. peruvensis*: *A. bomolochos* and *A. ignescens*, which both occur in adjacent Ecuador.

The *Atelopus ignescens* species group was defined by Peters (1973) for *Atelopus* with short limbs, heavy set bodies, and dull coloration when compared to many lowland species of *Atelopus*.

(Gray and Cannatella, 1985). This species group was exclusively Ecuadorian when described but with the description of a number of new species now occurs from Venezuela, Colombia, Ecuador, and Peru. It currently contains the following taxa according to Duellman (1993): *A. pictiventris* from Colombia (Katten, 1986), *A. subornatus* from Colombia was resurrected from synonymy from *A. ignescens* by Lotters (1989), and *A. tamaensis* from Venezuela (LaMarca, Garcia-Pérez and Renjifo, 1990).

This species has proven to do very well in captivity once established. Although, this is undoubtedly a species for the enthusiast with a cold room or adequate means of keeping a vivarium cool. *Atelopus peruvensis* ranges in elevation from approximately 2,530 m (8,300 ft) to 4,000 m (13,200 ft) in puna and subpuna environments (Gray and Cannatella, 1985). I have done well with them at daytime temperatures of 21°C down to 10°C during the night. Their terrarium is 0.6 x 0.6 m (2 ft sq.) with a substrate of seedling orchid bark and is planted with creeping fig. A plastic shoe box flush with the orchid bark is placed in the center of the enclosure and contains wet sponges and some standing water. The sponges are used for access to the water and to help minimize the depth of the water as several species of *Atelopus* drown easily in captivity. Pieces of wood add living spaces for the animals and are pleasing. An ultrasonic humidifier on a timer moistens the enclosure for about 15 minutes just before the lights are turned on. Food is administered daily and consists of pinhead crickets, wingless fruitflies, and flour beetles.

When trying to breed *Atelopus* several things should be kept in mind. First, the tadpoles of most species live in quickly flowing water, although a few are stagnant or puddle breeders. Running water is important for oviposition and proper development of the tadpoles. The few species that are "puddle" breeders use shallow, open pools, but remember some *Atelopus* drown easily. Second, these toads need good ventilation in their terrariums. Improper ventilation has lead to skin infections in several cases I am familiar with.

When I received my toads, two pair were in axillary amplexus. In an attempt to get the females to oviposit, I placed the toads in a tub 0.9 x 0.6 x 1.2 m (3 x 2 x 4 ft) with about 10 cm of water and a sponge land section. Flat rocks were stacked in part of the water section with small rocks between the larger to create a space for the frogs to use just above water level. This set up has been recommended by Robyn Saunders of the Cincinnati Zoo who had *A. chiriquensis* successfully oviposited in this set up. There appears to be an attraction for the toads to oviposit in a place with a "tight fit." The water in the tub was circulated with a water pump. Once a day during the day, the pump was attached to a piece of flexible tubing that ran along the side of the bin close to the top. The tubing had numerous holes punched in it so that with the pump turned on, it rained on the toads. These showers would be random and last from one to four hours a day.

The pair remained in amplexus for several weeks but broke without any egg deposition. One month later, a new pair amplexed and two more pairs amplexed in the following month. The three pairs remained in amplexus for two to four months before any egg deposition occurred. After two months of amplexus, eggs could be seen through the abdomen of the female. Unfortunately, the egg deposition process was not witnessed and the eggs were deposited in the water. The egg clutches were found within twelve hours of deposition and some were allowed to remain in the water while others were placed between the pieces of flat rocks so that they sat in water to a depth of about 2 mm. Unfortunately all egg clutches were in a state of decay within 72 hours. Interestingly, once the toads were placed in the regular vivarium a new pair amplexed. Approximately 3 months later a small

clutch of eggs was found in the shoe box. All eggs were off white in color and arranged into a "chain-like" structure typical of Bufonids. Clutch size ranged from approximately 50 to over 150 eggs.

This is a species, I feel, that have the potential for fairly serious problems with intestinal parasitic infections (especially in captivity). After reintroducing the animals into their regular vivarium, the animals were fed regularly. After watching all of the individuals eat for about a week, I noticed that several continued to loose weight. Considering this, I decided to administer Panicure® to see if this medication would have any effect. Administration was oral and all animals received treatment three times with a 10 day separation between treatments. Weight gain was noticeable within 15 to 25 days after the initial treatment.

It seems certain that *Atelopus peruvensis* will successfully reproduce in captivity once a few "wrinkles" are ironed out. *Atelopus* and other similar genera interest many of us as much as Dendrobatids; yet , little has really been done to advance our collective captive husbandry and reproductive knowledge base for this genus. Considering the seriousness of eroding wild populations, I hope to stimulate enough of you to engage in Atelopid projects of your own so that we can advance husbandry techniques out of the "dark ages" for this genus.

Literature Cited

- Gray, P. and Cannatella, C., 1985, A new species of *Atelopus* (Anura, Bufonidae) from the Andes of northern Peru. *Copeia*, 1985(4): 910-917.
- Duellman, W. E., 1993, Amphibian species of the world: Additions and corrections. Lawrence. The University of Kansas Museum of Natural History, Special Publication 21: 372 p.
- Frost, D. R., 1985, Amphibian species of the world. Allen Press, Inc. and The Association of Systematics Collections. Lawrence. 732 p.
- Katten, G., 1986, Nueva especie de rana (*Atelopus*) de los Farallones de Cali, Cordillera Occidental de Colombia. *Caldasia*, 14: 68-70.
- LaMarca, E., et al., 1990, A new *Atelopus* species (Amphibia: Anura: Bufonidae) from Paramo de Tama, Apure State, Venezuela. *Caldasia*, 16(76): 97-104.
- Lotters, S., 1989, Revalidation of *Atelopus subornatus* Werner, 1899. *Salamandra*, 25(3/4): 281-290.
- Peters, J. A., 1968, The frog genus *Atelopus* in Ecuador (Anura: Bufonidae). Smithsonian Institution, Contributions to Zoology, 145: 1-49.

HELPFUL HINTS

Grain Moths as food - This months "helpful hint" comes from David Luz who used Grain moths larva to feed his frogs. "Having had trouble finding the Lesser Wax Moth to culture for small frogs, I stumbled upon an easy to culture moth larva that seems to thrive on neglect. The humble little Grain Moth which grows nicely in Wax Worm medium available from Carolina Biological Supply (Item No. L909M). To start a culture simply put a bag of the medium in a gallon jar, add a handful of any wild bird seed in a small open container sitting on the medium and wait. The eggs of the Grain Moth are in the bird seed and when they hatch they spread to your culture. Remove the seeds when you see signs of worms in the medium.

"To harvest the larva I simply dump the whole culture out and pick through for larva of the desired size. They will range from under 1/8" to about 1/2" tops - a good size for Mantella's and

poison frogs. One word of caution - the larvae chew through almost anything! I keep my jar in a plastic bag doubled or tripled over at the top and fastened with a rubber band and replaced frequently. The moths do not eat themselves, but they are a nuisance and will lay eggs in any grain or grain product (cereal, flour) in the house, even in containers which appear closed."

Poison frogs on the Internet - ADG member Dennis D. Mosley (6701 Sands Point #95, Houston, TX 77074 E-mail: YMBA53A@PRODIGY.COM) would like to know if anyone is interested in exchanging poison frogs information over the internet. If your interested please contact him at one of the above addresses. He is also interested in answers to the following questions. 1) Do you have access to a computer? And a modem? 2) Do you use an on line service or the Internet? Which one? 3) Do you have an E-mail address? What is it? 4) Would you rather see an area on the Internet or a BBS for Dendrobatid discussions and information? Or does one already exist? Please contact him if you are interested in poison frogs and have access to the Internet.

First Annual American Frog Day! - Planning for the First Annual American Frog Day is underway. This will not be for dendrobatids alone but will include all amphibians. Two talks have been arranged - including one by the national known frog specialists Danté Fenolio. It will be held in central California sometime in August. I would like to hear from anyone who might be interested in attending to get an idea of how big a building we will need. Also if anyone is interested in giving a talk, selling or trading frogs, terrariums, plants or other cage "furniture" please give me a call. Any help would also be greatly appreciated. Contact Charles Powell (2932 Sunburst Dr., San Jose, CA 95111-2264 Tel.: (408) 363-0926).

NEW LITERATURE

Atelopids

La Marca, Enrique and Reinthaler, Hans Peter, 1991, Population changes in *Atelopus* species of the Cordillera de Mérida, Venezuela. *Herps Review*, 22(4): 125-127.

Dendrobatids

Barnett, Adrian, 1994, Poison frogs eat poison prey. *New Scientist*, 143(1933): 16-17.

Conover, Adele, 1994, A new world comes to life, discovered in a stalk of bamboo. *Smithsonian*, 25(7): 121-129.

Grall, George, 1994, Pretty poison. *National Geographic World*, No. 225: 23.

Hutchinson, Kra D., Silverton, James V., and Daly, John W., 1994, Synthesis of Pyrrolizidine Oximes 222 and 236: novel alkaloids of a dendrobatid poison frog. *Tetrahedron*, 50(21): 6129-6136.

Kaiser, Hinrich, Coloma, Luis A., and Gray, Heather M., 1994, A new species of *Colostethus* (Anura: Dendrobatidae) from Martinique, French Antilles. *Herpetologica*, 50(1): 23-32.

Moreira, Glória and Lima, Albertina P., 1991, Seasonal patterns of juvenile recruitment and reproductionn in four species of leaf litter frogs in central Amazonia. *Herpetologica*, 47(3): 295-300.

Roithmair, Margarete E., 1994, Field studies on reproductive behaviour in two dart-poison frog species (*Epipedobates femoralis*, *Epipedobates trivittatus*) in Amazonian Peru. *Herpetological Journal*, 4(3): 77-85.

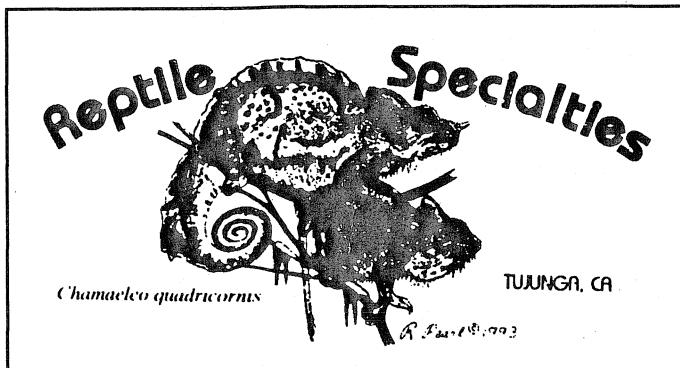
Mantellids

Glaw, Frank and Vences, Miguel, 1994, A fieldguide to the Amphibians and Reptiles of Madagascar

(second edition). Bonn. Zoologisches Forschungsinstitut und Museum Alexander Koenig: 1-480.

ADDS:

Rates for business card adds are \$10 per issue or \$50 per year. If you are interested please contact the Newsletter editor. All other adds for sale of frogs, or requests or offering of breeding loans are free to members.



Tropical Rainforest School Assembly Program
a nonprofit environmental education organization

needs donations of dry-goods and livestock for our collection of exotic animals used in schools. Help us educate children about conservation.
-used aquariums, terrariums, lights, decor-reptiles, amphibians, birds, exotic insects-
-animals are under veterinary supervision
-your donations are tax-deductible!

Call for more info & to make arrangements:
(408) 281-7100

Reptile Specialties (John Uhern, 10051 Commerce, Tujunga, CA 91042 Tel. (818) 352-1796; Fax (818) 353-7381) have various captive breed Dendrobatids imported for sale. Write or call for information.

Does your passion for Dendrobatids go beyond merely breeding them as a hobby? Does your interest extend to preserving their native habitat?

The Tropical Rainforest School Assembly Program will reach 60,000 children and 40,000 adults this year with its message of conservation. This highly acclaimed program provides young students and adults with a personal experience of the wonderful creatures that live in the tropical rainforest. Then their meaningful encounter is transformed into a new determination to conserve natural resources, recycle, and help save the remaining tropical rainforests. We also practice what we preach- we purchase one preservation acre of rainforest for each and every school for which we do an assembly, as a gift in honor of that school.

We need rainforest frogs. Your donation of exotic animals, dry-goods, or cash, will help us expand our program to more children. Contact us at T.R.S.A.P., P.O.Box 53589, San Jose, CA 95153, Ph: 408-2817100 regarding your contribution.

Adds for members are free and will run for one issue only, unless the Newsletter editor is notified.

For Sale

<i>Dendrobates auratus</i> 'Hawaii'	\$25 ea.	Eric Anderson
<i>Dendrobates leucomelas</i> 'Orange'	\$60 ea.	12231 Newberry Rd.
<i>Dendrobates tinctorius</i> 'Cobalt'	\$40 ea.	Gainesville, FL 32607
<i>Dendrobates tinctorius</i> 'Brazil'	\$60 ea.	(904) 332-7908
<i>Epipedobates tricolor</i> (3 morphs)	\$30 to \$50 ea.	

Many *Dendrobates tinctorius* morphs and some half grown *Dendrobates leucornelas* 'Orange' (from unrelated females). Also various CB "thumbnail" size unrelated Dendrobatids. Prices are negotiable. Ted R. Kahn (P. O. Box 1375, Sterling, VA 20164-1375. Tel.: (703) 421-9531 (until April)).

<i>Phylllobates vittatus</i> (nice color)	\$40 ea	Larry J. Marshall 1239 Park Ave. Chicago Heights, IL 60411 (708) 754-7692
<i>Dendrobates tinctorius</i> 'Giant Orange'	\$90 ea	Charles Nishihara 3271 Pinao St. Honolulu, HI 96822 (808) 988-3420
<i>Dendrobates auratus</i> 'Zwartgroene' (a Panamanian form which is 80% black)	\$50 ea.	Charles Powell 2932 Sunburst Dr. San Jose, CA 95111 (408) 363-0926
<i>Epipedobates tricolor</i> 'Santa Isabel' (bright red and white form) tadpoles	\$25 ea. (5/\$100)	
juvenile frogs (small)	\$40 ea.	
<i>Dendrobates auratus</i>	\$35 ea	Michael J. Shorm
<i>Epipedobates tricolor</i> (lime green stripes)	\$35 ea	24 E. Chestnut St.
<i>Phylllobates vittatus</i>	\$35 ea	Ephrata, PA 17522-2204 (717) 738-2755

Wanted:

<i>Dendrobates imitator</i> 'Orange head'	Larry J. Marshall 1239 Park Ave. Chicago Heights, IL 60411 (708) 754-7692
---	--

Societies

AMERICAN TARANTULA SOCIETY: For enthusiasts and scientists. Forum (6/yr) educational, entertaining and readable. Write: ATS, P. O. Box 2594, S. Padre Island, TX 78597. \$15/year US, \$20/year Canada, \$30/year elsewhere.

